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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,584	11/18/2003	James A. Kweeder	H9910-0105	6258

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EXAMINER

SANDERS, KRIELLION ANTIONETTE

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/716,584

Applicant(s)

KWEEDER, JAMES A.

Examiner

Kriellion A. Sanders

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 102

The rejections are repeated for reasons of record.

2. Claims 1-10 and 13-24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by British Patent No. 2274109.

The British Patent discloses compositions that contain Nylon 6 or Nylon 6,6 and 1-5% of caprolactam. Fibers of the composition are formed by extrusion. See page 2, paragraph 4 and page 3, paragraph 1.

Claims 1-11, 13-25 and 27 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Walde us Patent No. 5047459.

Walde discloses polyamide compositions comprising caprolactam at less than 5% by weight and the production step of extrusion. See col. 2, line 36 through col. 4, line 24.

Claims 1-4, 11, 13, 14, 15, 16, 22-25 and 27 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Mason et al, US Patent No. 4745143.

Mason et al discloses mixtures of caprolactam and hexamethylene adipamide. See col. 1, line 64 through col. 2, line 43, col. 3, lines 9-24 and col. 6, lines 64-67.

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Claims 1, 2, 4-14, 16-24, 27 and 28 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shridharani et al, US Patent No. 5,223,196.

A discussion of the pertinent teachings of Shridharani et al is provided in the 35 USC 103 rejection below.

Response to Arguments

Applicant's arguments filed 8/28/06 have been fully considered but they are not persuasive. Applicant argues that there is no teaching in the above references that the caprolactam addition to the mixture of nylon and magnesium hydroxide results in the formation of a gel composition. However, it is believed that because the components and processing equipment of the patented inventions are essentially the same as those of applicant's claims, the formation of a gel is inherent. Patentees' silence as to the physical state of the components used in the patented inventions, is not clear indication that a physical state which is a gel is precluded. While applicant emphasizes that the lactam of the present claims functions as gelling agent, it is concluded that the same lactam component utilized by applicant is also utilized in the patented inventions, particularly caprolactam. It is therefore believed that the present invention is inherently met by the references of record.

3. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that there is no recognized solvent system for gel-processing of polyamide-6) are not recited in the rejected claim(s), because the claims do not limit the amide-based polymer to polyamide-6. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-24, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over British Patent No. 2,274,109 as applied to claims 1-10 and 13-24 in view of Shridharani et al, US Patent No. 5,223,196.

The British patent equates nylon 6 and nylon 6, 6.

Shridharani et al discloses an improved process for melt-spinning a pigmented hexamethylene adipamide *fiber*. In one form of the invention two recurring amide-forming moieties are incorporated into the polyamide to be *spun* by polymerizing a blend of nylon 6,6-forming monomers, i.e. hexamethylene diamine and adipic acid or hexamethylene adipate salt, with 0.25 to 10 weight percent each, preferably 0.4 to 7.5 weight percent each, of two or more different difunctional polyamide-forming monomers to produce a random interpolyamide which is a terpolymer or a multi-polymer. For instance, Example 1 of the patent illustrates a terpolymer formed by the polymerization of nylon 6,6 forming monomers, *caprolactam*, and sodium 5-sulfoisophthalate. The processes of the invention can be used to produce nylon fibers having different degrees of orientation and therefore different tensile properties.

Example 1 of the patent is a random terpolymer of nylon 6,6; 3 wt % polymerized units of *caprolactam*; and 2 wt % polymerized units of sodium 5-sulfoisophthalate. These percentages of components meet the weight percent requirements of applicant's claims. The fibers may be

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used to form carpets. Patentee explains that as the *fiber's* orientation increases, its tenacity is increased. Depending on the tenacity and other *fiber* properties needed for a given end-use application, the desired degree of orientation is determined. The total mechanical draw necessary to achieve that level of orientation, and hence the desired *fiber* properties, is then set. The freshly-*spun fiber* is drawn by tensioning it typically between feed rolls and faster-turning draw rolls, the ratio between the two (draw ratio) being the measure of the draw and the degree of orientation being achieved. If the tension on the *fiber* is too high as it is being drawn at any given draw ratio, breaks occur and the process is disrupted. It is therefore desirable to reduce the draw tension necessary to achieve a predetermined draw ratio. Fibers to be used in textile and *carpet* applications, for example, require comparatively low tensile strength, and the freshly-*spun* fibers are typically drawn from as little as about 150% for textile yarns to about 250-300% to provide tensile properties (about 3 grams/denier tenacity and about 65% elongation) suitable for *carpet* fibers. Patentee further explains that for industrial applications however, higher tenacity fibers are desirable and consequently more orientation is needed.

See col. 2, lines 1-25, col. 4, line 35 through col. 5, line 50. Also see col. 13, line 20 through col. 14, line 61.

Response to Arguments

Applicant argues that the disclosure of the present invention makes it very clear that that formation of the gel composition and gel processing is an alternative to melt blending and melt spinning. Therefore, Shridharani provides the conventional method of processing these types of materials. Applicant's specification at pages 11 and 12 indicate that melt blending and melt spinning procedures are not precluded from the present invention. Applicant indicates that

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thermal energy above the melting point may be applied to the materials and that spun-fiber products are contemplated. Patentees' silence as to the physical state of the combined components used in the patented invention is not clear indication that said physical state is not gel-like. While applicant emphasizes that the lactam of the present claims functions as gelling agent, it is concluded that the same lactam component utilized by applicant is also utilized in the patented invention. It is therefor believed that the gel composition of the present invention is inherently achieved by the reference.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kriellion A. Sanders whose telephone number is 571-272-1122. The examiner can normally be reached on Monday through Thursday 6:30-7:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kriellion A. Sanders
Primary Examiner
Art Unit 1714

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